

Remarks:

Applicant appreciatively acknowledges the Examiner's confirmation of receipt of applicant's claim for priority and certified priority document under 35 U.S.C. § 119(a) - (d).

Additionally, the present case was telephonically made the subject of an election requirement by Examiner Chung. On June 25, 2004, Applicant telephonically elected under traverse to proceed with the examination of claims 1 - 23. Applicant's representative set forth reasons for the traversal. In the present action all 28 claims that were originally pending were considered by the Examiner. As such, it is presumed that Applicant's reasons for traversal were persuasive and that all claims are currently pending in the present case.

Reconsideration of the present application is respectfully requested.

Pursuant to the Office Action, claims 1 - 28 are presently pending in the application. Claims 24, 26 and 28 have been amended in an effort to even more clearly define the invention of the instant application. The Specification has been amended to correct a typographical error.

In paragraph 2 on page 2 of the above-identified Office action, claims 1 - 28 have been rejected as allegedly being anticipated under 35 U.S.C. § 102 by U. S. Patent No. 4,961,053 to Krug ("KRUG"). Applicant respectfully traverses the above rejection based on KRUG.

I. The KRUG reference fails to teach or suggest, and in fact specifically teaches against, an integrated circuit including a self-test device as required by independent claims 1 and 10 of the present application.

The invention of Applicant's claims 1 and 11 relate to a method and apparatus, respectively, for testing an integrated circuit. More specifically, method claim 1 requires, among other limitations:

"providing an integrated circuit that includes a self-test device;"

Apparatus claim 11 similarly requires, among other limitations:

"[a]n apparatus for testing an integrated circuit using a self-test device that is located in the integrated circuit,"

This limitation is supported in many places in the specification of the present application, including at pg. 1, lines 9 - 13; pg. 15, lines 19 - 22; pg. 18, lines 20 - 21; and pg. 32, lines 11 - 14.

Both the present application and the KRUG reference define the wafer as containing multiple integrated circuits. These are the final components cut into dies. On page 13 of the present application, Fig. 7 is described as showing "a wafer carrying a large number of integrated circuits." In KRUG, column 2, lines 55 - 57, Fig. 1 is described as "a diagrammatic plan view of a base plate 1 on which a plurality of circuit components 2 to be tested are formed as integrated circuits".

However, in contrast to Applicant's invention of claims 1 and 11, KRUG specifically teaches away from each integrated circuit including its own self-test device. In column 1, lines 42 - 51 KRUG states:

Other prior publications have suggested that each circuit component have its own testing circuit permanently built into it. This causes large proportions of area of the circuit components as well as the available external connections of the finished units to be lost. Further, these circuit components have to be tested individually, which is very time consuming. Errors are detected only in the final condition of the circuit component, so that many manufacturing steps required to reach the final condition result in a waste of time.

And, in describing its own device in column 3, lines 18 - 24, KRUG states:

The testing circuit 3 occupies a larger area on the base plate 1 than the individual circuit components 2 but it saves separate testing circuits which are built

into every one of the circuit components and which together would occupy even a larger area and especially would reduce the number of functional elements of the circuit component. [emphasis added]

Applicant's invention set forth in claims 1 and 11 requires not only that each integrated circuit have a self-test circuit built therein, but also that the integrated circuit perform a test before being connected to an external testing device and subsequently making available to an external testing device the results of that test. As noted above, KRUG teaches away from using a self-test circuit as part of the individual circuit components. In fact, the teachings of KRUG would be destroyed by constructing the integrated circuits as described in claims 1 and 11. KRUG is silent on how the cited prior art devices used the self-test circuit, and further doesn't teach or suggest, the particular elements recited in Applicant's claims 1 and 11.

In view of the foregoing, it is believed that independent claims 1 and 11, are patentable over the KRUG reference and the prior art discussed in KRUG, in their original forms and, therefore, those claims have not been amended herein. As it is believed that the independent claims are patently distinguishable from KRUG, it is additionally believed that claims 2 - 10 and 12 - 15 depending therefrom, are presently in condition for immediate allowance.

II. The KRUG reference fails to teach or suggest, and in fact specifically teaches against, an integrated circuit including a self-test device as required by independent claim 16 of the present application.

As with claims 1 and 11 described above, independent claim 16 requires an integrated circuit comprising "a self-test device for testing said components". As described above, those remarks being incorporated herein, the KRUG reference specifically teaches not to include the self-test circuit in the individual integrated circuit. Further, independent claim 16, and claims 17 - 23 depending therefrom, require, among other limitations, that the integrated circuit include components and "a device for, at a particular time, taking specific ones of said components out of operation". Nowhere in the KRUG reference, is there taught or suggested a system wherein the self-test device is in the integrated circuit itself (specifically taught against in KRUG), and having the other elements of Applicant's claim 16.

It is clear that KRUG teaches away from using a self-test circuit as part of the individual circuit components. As noted herein, the teachings of KRUG would be destroyed by constructing the integrated circuits as described in claims 1 and 11. KRUG is silent on how the cited prior art devices used the self-test circuit, and further doesn't teach or

suggest, the particular elements recited in Applicant's claim 16.

In view of the foregoing, it is believed that independent claim 16, is patentable over the KRUG reference and the prior art discussed in KRUG, in its original form and, therefore, that claim has not been amended herein. As it is believed that the independent claim is patently distinguishable from KRUG, it is additionally believed that claims 17 - 23 depending from independent claim 16, are presently in condition for immediate allowance.

III. The KRUG reference fails to teach or suggest, and in fact specifically teaches against, an integrated circuit including a self-test device as required by claim 24 of the present application, as amended herein.

Independent claim 24, as amended herein, recites, among other limitations, a wafer comprising a plurality of integrated circuits, each including a self-test device therein. As discussed above in Sections I and II, those remarks incorporated herein, the teachings of the KRUG reference would be destroyed by modifying them to so construct the circuit. Additionally, The KRUG is silent on the particular configuration and/or operation of the prior art devices discussed in that reference. Further, KRUG is silent on the particular details of the electrical interconnections which are required by Applicant's dependent claims. As such, the

KRUG reference neither teaches, nor suggests, the invention of Applicant's claim 24, or claims 25 - 28 depending therefrom.

IV. Conclusion

It is accordingly believed that the KRUG reference neither teaches nor suggests, the features of independent claims 1, 11, 16 and 24. Independent claims 1, 11, 16 and 24 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on an allowable independent claim.

In view of the foregoing, reconsideration and allowance of claims 1 - 28 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

Additionally, please consider the present as a petition for a one month extension of time, and please provide a one month extension of time, to and including, Nov. 2, 2004 to respond to the present Office Action.

Applic. No. 09/922,479
Response Dated October 28, 2004
Responsive to Office Action of July 2, 2004

The extension fee for response within a period of 1 month pursuant to Section 1.136(a) in the amount of \$110.00 in accordance with Section 1.17 is enclosed herewith.

Please provide any other extensions that may be required and charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,


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For Applicant

KPS:cgm

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